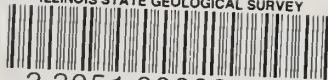



ILLINOIS STATE GEOLOGICAL SURVEY



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Urbana, Illinois

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INDUSTRIAL MINERALS PRODUCED IN ILLINOIS IN 1943

Clays and Clay Products, Fluorspar, Sand, Gravel, Silica Sand,
Ground Silica, Tripoli, Stone, Cement, Lime, Mineral Wool

and

AGSTONE USED IN ILLINOIS IN 1943

Preliminary Report

By

Walter H. Voskuil and Douglas F. Stevens

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PRELIMINARY REPORT

INDUSTRIAL MINERALS PRODUCED IN ILLINOIS IN 1943

Introduction

War conditions profoundly affected the production of all industrial minerals in Illinois in 1943. Those minerals necessary to the war effort have been produced in constantly increasing amounts, but the general shortage of labor and decreased demand has reduced the production of other industrial minerals in varying degree.

Increases were noted in the output of metallurgical flux, refractories, drain tile, porcelain for industrial uses, fluorspar, glass, fire and furnace sand, and other items of lesser tonnages. Decreases were mainly in the structural materials and were most pronounced in brick, structural tile, cement, and sand and gravel for structural use.

In this preliminary report are given the approximate results of the canvass of mineral producers made jointly by the Illinois Geological Survey and the United States Bureau of Mines on Illinois' 1943 production of clays and clay products, fluorspar, silica sand, ground silica, other sand and gravel, tripoli, and stone, including limestone, dolomite, calcareous marl, cement, lime, and mineral wool.

The preliminary report on the "Use of Agstone in Illinois in 1943" covers ground limestone, dolomite, and marl, used for agricultural purposes

of soil improvement, by counties, as determined by the canvass of producers made by the Illinois Geological Survey in cooperation with the Midwest Agricultural Limestone Institute.

All of the figures given in this preliminary report are subject to revision when the various canvasses are completed.

Clays and Clay Products

Clays (including fuller's earth), which were sold and shipped as such in Illinois in 1943, are shown in Table 1, by kind and by use. These do not include clays burned into clay products by their producers, which are reported in the resultant clay products. Corresponding figures for 1942 are given for comparison, and the percent change in amount from that for 1942 is given.

Considering the kinds of clays, fuller's earth showed the greatest increase in amount of shipments, 110 percent, or more than double that for the previous year. Stoneware clay shipments increased 53 percent, and fire clay 5 percent, while kaolin, shale and surface clay decreased. Total clays sold and shipped increased 18 percent to 246,500 tons, valued at plants at more than \$1,039,700.

Comparison of the various uses of clays showed the following increases from 1942, in amount of shipments: oil refining and cleaners, 112 percent; bonding foundry sands, 10 percent; for making structural products, 10 percent; laying and daubing refractories, 5 percent. Other uses showed decreases varying from 12 to 30 percent. Total non-ceramic uses increased 44 percent to 112,000 tons, while total ceramic uses increased 3 percent to 134,500 tons.

Clay Products (including silica refractories) sold and shipped by producers in Illinois in 1943, and comparison with those in 1942, is given in Table 2. With white wares and pottery, wide differences in size of products make it impossible to give amounts, so comparison is made by values.

Shipments of structural clay products in 1943 showed a decrease of 27 percent in amount compared with that of the previous year. Drain tile made a notable increase of 35 percent, while other structural products decreased varying amounts from 29 to 48 percent. Total structural products were 830,000 tons, valued at plants at \$4,515,000.

Refractories, clay and silica, decreased 5 percent in total, but plastic and castable refractories increased 10 percent, while other refractories decreased from 4 to 8 percent. Total refractories were 260,000 tons, valued at \$5,379,000.

White wares and pottery remained practically the same, with a total value at plants of \$7,350,000. Porcelain increased 47 percent, while stoneware and kitchenware increased 43 percent. Other kinds of white wares decreased from 1 to 18 percent.

Total clay products sold and shipped in Illinois in 1943 were valued at plants at over \$17,254,000, a decrease of 12 percent from the previous year.

Table 1. - Clays (including Fuller's Earth) Sold and Shipped ^{a/}
by Producers in Illinois, 1942 and 1943, by Kind and by Use

Line No.	Kind	1942*			
		Plants b/	Amount tons	Value at plants	
				Total	Av.
1	Fire clay	8	157,104	\$386,819	\$2.47
2	Stoneware clay	3	1,271	3,156	2.49
3	Kaolin	3	1,011	9,360	9.26
4	Shale and surface clay	2	18,132	38,707	2.13
5		13	177,518	438,042	2.47
6	Fuller's earth	1	30,421	264,611	8.70
7	Total clays sold and shipped	14	207,939	702,653	3.38
	<u>Use</u>				
8	<u>Ceramic -</u>				
9	Refractories: laying and daubing	3	113,781	233,416	2.05
10	mfg. brick, crucibles, etc.	3	6,785	16,313	2.30
11	Structural products	2	7,200	8,800	1.22
12	White wares and pottery	6	2,801	6,176	2.20
13		9	130,567	264,705	2.02
14	<u>Non-ceramic -</u>				
15	Bonding foundry sands	5	29,310	136,673	4.66
16	Fillers, etc.	2	17,938	38,891	2.17
17	Oil refining, cleaners	1	30,124	262,384	8.72
18		6	77,372	437,948	5.68
19	Total clays sold and shipped	14	207,939	\$702,653	\$3.38

* Revised figures.

a/ Compiled from joint canvass made by U. S. Bureau of Mines and Illinois Geological Survey.

b/ Number of plants reporting production during year indicated.

Table 1. - Concluded

Plants b/	Amount tons	1943		Percent change in amount from 1942	No. Line
		Total	Av.		
4	164,452	\$409,729	\$2.49	+ 4.6	1
2	1,948	4,807	2.47	+ 53.5	2
2	434	3,469	8.00	- 57.2	3
3	15,786	45,981	2.91	- 13.0	4
11	182,620	463,986	2.54	+ 2.7	5
1	63,908	575,805	9.01	+110.0	6
12	246,528	1,039,791	4.22	+ 18.2	7
3	119,438	246,927	2.07	+ 5.0	8
3	5,210	5,225	1.00	- 22.8	9
2	7,900	10,380	1.31	+ 10.0	10
3	1,948	4,807	2.47	- 30.5	11
7	134,496	267,339	1.99	+ 3.0	12
3	32,338	150,666	4.66	+ 10.1	13
4	15,786	45,981	2.91	- 12.0	14
1	63,908	575,805	9.01	+112.0	15
7	112,032	772,452	6.90	+ 44.2	16
12	246,528	\$1,039,791	\$4.22	+ 18.2	17
					18
					19

Table 2. - Clay Products (including Silica Refractories)
 Sold and Shipped by Producers in Illinois, 1942 and 1943^{a/}

Line No.	Kind	1942			
		Plants b/	Amount	Value at Plants	
				Total	Av.
1	<u>Refractories - clay and silica</u>		tons		
2	Firebrick and shapes	7	239,603	\$4,912,744	\$20.50
3	Plastic and castable refractories	3	12,360	529,367	42.83
4	Cements and mortars	6	12,355	331,392	26.90
5	Other refractories	3	11,138	144,615	12.98
6	Total refractories	10	275,456	5,918,118	21.48
7	<u>Structural clay products</u>		thous.		
8	Common brick	35	298,181	3,096,717	10.39
9	Face brick	18	55,045	861,004	15.64
10	Paving block	3	2,079	50,682	24.38
11			tons		
12	Total (in equivalent tons)	39	890,342	4,008,403	4.50
13	Drain tile	16	72,607	578,834	7.97
14	Structural tile	17	88,870	524,144	5.90
15	Sewer pipe, flue lining, wall coping	4	27,964	549,592	19.65
16	Terra cotta and glazed block	3	3,451	293,837	85.15
17	Other structural products	7	51,933	371,700	7.15
18	Total structural clay products	54	1,135,167	6,326,510	5.57
19	<u>White wares and pottery</u>				
20	Flowerpots	4	-	183,628	-
21	Stoneware and kitchenware	4	-	984,303	-
22	Dinnerware and art china	3	-	431,190	-
23	Art pottery	8	-	1,790,714	-
24	Vitreous-china plumbing fixtures	3	-	3,204,601	-
25	Porcelain and other whiteware	6	-	786,781	-
26	Total white wares	20	-	7,381,217	-
27	Total clay products	82	-	\$19,625,845	-

a/ Compiled from canvass made by Illinois Geological Survey.

b/ Number of plants reporting production during year indicated.

c/ Includes facing block.

d/ Percent change in value from 1942.

Table 2. - Concluded

Plants b/	Amount	1943 Value at plants		Percent change in amount from 1942	No. Line
		Total	Av.		
	tons				
7	219,258	\$4,361,933	\$19.89	- 8.5	1
4	13,593	506,598	37.27	+10.0	2
6	11,788	190,231	16.14	- 4.6	3
8	15,723	320,730	20.40	-	4
12	260,362	5,379,492	20.66	- 5.5	5
					6
	thous.				
31	174,500	1,965,500	11.26	-41.6	7
19	28,500	443,800	15.57	-48.1	8
3	4,800	110,100	22.94	-	9
					10
	tons				11
34	524,600	2,519,400	4.80	-41.2	12
14	97,700	800,900	8.20	+34.8	13
16	63,400	381,800	6.02	-28.7	14
3	17,800	383,200	21.53	-36.1	15
4	c/ 5,500	109,500	19.91	-	16
3	121,100	320,500	2.65	-	17
45	830, 100	4,515,300	5.44	-26.7	18
				d/	19
3	-	188,465	-	+ 2.6	20
4	-	1,403,600	-	+42.6	21
3	-	426,694	-	- 1.1	22
5	-	1,548,800	-	-13.5	23
3	-	2,637,500	-	-17.7	24
5	-	1,154,500	-	+46.7	25
17	-	7,359,559	-	- 0.3	26
				d/	
73	-	\$17,254,351	-	-12.0	27

Fluorspar

Mining of fluorspar established another all-time high record in Illinois in 1943, for the second successive year. The record was 198,789 tons, valued at the mines at \$6,292,789. This was an increase in tonnage of 23 percent over that of the previous year. Illinois ranks first among all the states in the production of fluorspar.

Table 3. - Fluorspar Shipped from Mines in Illinois,
1942 and 1943, by Kind and by Use ^{a/}

Line No.	<u>Kind of Fluorspar</u>	1942			
		Mines <u>b/</u>	Amount tons	<u>Value at Mines</u>	
				Total	Av.
1	Metallurgical <u>c/</u>	42	82,919	\$2,022,783	\$24.39
2	Flotation concentrates	10	69,752	1,986,540	28.48
3	Ground <u>d/</u>	4	9,278	297,427	32.05
4	Total fluorspar	44	161,949	\$4,306,750	\$26.59
	<u>Use</u>				
5	Steel		77,947	1,887,216	24.30
6	Foundry		912	20,159	22.00
7	Glass and enamel		7,520	234,696	31.10
8	Hydrofluoric acid		62,573	1,788,837	28.60
9	Other industries		5,842	180,124	30.80
10			154,794	4,111,032	26.50
11	Exported		7,155	195,718	27.30
12	Total	44	161,949	\$4,306,750	\$26.59

a/ Compiled from canvass made by U. S. Bureau of Mines.

b/ Number of mines reporting production during year indicated.

c/ Includes "pelletized gravel" flotation concentrates in 1942.

d/ Includes flotation concentrates used for ceramic purposes in 1942.

Shipments of fluorspar from mines in Illinois for 1942 and 1943 are given in Table 3, by kind and by use. The greatest increase in use was for the manufacture of hydrofluoric acid, 43 percent, which brought the amount of fluorspar used in this industry up to that used in the steel industry. The latter showed an increase of 15 percent, and the foundry industry used 32 percent more than the previous year.

Table 3. - Concluded

1943					Line No.
Mines b/	Amount tons	Value at mines		Percent change in amount from 1942	
		Total	Av.		
28	84,929	\$2,482,319	\$29.23	+ 2.4	1
14	104,131)	3,810,470	33.47	+49.3	2
2	9,729)			+ 4.8	3
37	198,789	\$6,292,789	\$31.66	+22.7	4
	89,789	2,624,000	29.22	+15.1	5
	1,204	28,632	23.78	+32.0	6
	6,741	227,849	33.80	-10.4	7
	89,599	3,030,442	33.82	+43.2	8
	9,123	309,737	33.95	-	9
	196,456	6,220,660	31.66	+26.9	10
	2,333	72,129	30.91	-67.4	11
37	198,789	\$6,292,789	\$31.66	+22.7	12

Sand and Gravel

Silica Sand.-- Production of silica sand in Illinois in 1943 established another all-time high record, 3,375,000 tons, valued at the plants at approximately \$4,800,000. This was an increase of 8 percent in amount from 1942, which was the previous high record. Illinois ranks first among all the states in the production of silica sand for steel molding sand and for glass sand.

Ground Silica.-- During 1943 the production in Illinois of ground silica, or silica flour, made by fine grinding of washed silica sand, amounted to 173,800 tons, valued at the plants at \$1,218,700. As shown in Table 5, this was an increase of 4 percent in amount from the previous year. Illinois ranks first among all the states in the production of ground silica.

Use of this material in the manufacture of enamel and glass during 1943 increased 110 percent from the previous year, while in the pottery, porcelain and tile industries its use increased 28 percent.

Other sand and gravel.-- Production of other sand and gravel in Illinois in 1943 declined due to shortage of labor and stoppage of construction, which resulted from concentration on war industries. Natural-bonded molding sand also declined in 1943. However, novaculite gravel production increased 36 percent over the previous year.

Table 4 shows sand, gravel, silica sand sold or used by producers in Illinois in 1942 and 1943, by kind and by use. The total amounts to 13,608,000 tons, valued at the plants at \$9,858,000, which was a decrease of 24 percent in amount from 1942.

Uses of industrial sands totaled 3,596,000 tons, valued at \$4,939,000, which was an increase in amount of 8 percent from the previous year. The greatest proportionate increases were made in glass sand and fire or furnace sand. Steel molding sand and blast, grinding and polishing sands also showed increases.

Construction uses of sand and gravel amounted to 10,012,000 tons, valued at \$4,918,000, which was a decrease of 33 percent. Each class of construction showed decreases varying from 27 to 35 percent. This indicates the thoroughness with which Illinois has supported the war effort.

Government-and-contractor operations declined 40 percent, compared with the decline of 23 percent for commercial operations.

Tripoli (amorphous silica).- Production of tripoli (amorphous silica) in Illinois during 1943 amounted to 10,200 tons, valued at the plants at \$168,700 as given in Table 6. Illinois ranks first among the states in production of tripoli.

This material was used as an abrasive, polish, filler, and for numerous other purposes.

Table 4. - Silica Sand, Natural-bonded Molding Sand, Other Sand, Gravel, Novaculite Gravel, Sold or Used by Producers in Illinois, 1942 and 1943, by Kind and by Use^{a/}

Line No	Kind	1942*			
		Plants b/	Amount tons	Value at plants	
				Total	Av.
1	Silica sand	14	3,103,897	\$ 4,055,602	\$1.31
2	Natural-bonded molding sand	14	107,263	135,391	1.26
3	Other sand	90	5,362,043	2,492,274	.46
4	Gravel	165	9,329,702	4,816,164	.52
5	Novaculite gravel	1	20,934	15,700	.75
6	Total	207	17,923,839	\$11,515,131	\$0.64
	<u>Use</u>				
7	<u>Industrial Sands:</u>				
8	Glass	3	833,460	1,206,598	1.45
9	Steel molding	14	1,914,491	2,070,436	1.08
10	Natural-bonded molding	14	107,263	135,391	1.26
11	Blast, grinding and polishing	4	173,500	524,964	3.03
12	Fire or furnace	3	36,016	56,222	1.56
13	Filter and engine	16	184,348	107,277	.58
14	Other Industrial Sands	2	68,008	110,518	1.63
15		40	3,317,086	4,211,406	1.27
16	<u>Sand and Gravel for Construction:</u>				
17	Structural	91	5,368,795	2,589,992	.48
18	Paving and highway structures	147	5,727,449	3,295,428	.55
19	Railroad ballast	23	3,107,351	1,234,056	.40
20	Other Construction Uses	14	403,158	184,249	.46
21		181	14,606,753	7,303,725	.49
22	Total	207	17,923,839	11,515,131	.64
23	Total commercial operations	167	16,742,412	10,657,862	.64
24	" Gov.-Contr. "	40	1,181,427	857,269	.73
25	Total-Both	207	17,923,839	\$11,515,131	\$0.64

* Revised figures.

a/ Compiled from joint canvass made by U. S. Bureau of Mines and Illinois Geological Survey.

b/ Number of plants reporting production during year indicated.

Table 4. - Concluded

1943					Line No.
Plants b/	Amount tons	Value at plants		Percent change in amount from 1942	
		Total	Av.		
10	3,375,744	\$4,798,982	\$1.42	+ 8.7	1
8	81,300	104,400	1.28	-24.2	2
80	3,471,000	1,659,100	.48	-35.3	3
144	6,652,000	3,274,800	.49	-28.7	4
1	28,422	20,873	.73	+35.8	5
176	13,608,466	\$9,858,155	\$0.72	-24.1	6
4	1,004,796	1,425,895	1.42	+20.6	7
9	2,047,092	2,612,407	1.28	+ 6.9	8
8	81,300	104,400	1.28	-24.2	9
3	186,662	553,844	2.97	+ 7.6	10
3	46,399	53,024	1.12	+28.8	11
17	171,152	86,679	.51	- 7.2	12
2	58,857	103,499	1.76	-13.5	13
32	3,596,258	4,939,748	1.37	+ 8.4	14
					15
					16
77	3,944,800	1,987,900	.50	-26.6	17
127	3,780,900	1,938,900	.51	-34.0	18
17	2,019,800	824,900	.41	-35.0	19
13	266,708	166,707	.63	-33.8	20
159	10,012,208	4,918,407	.49	-33.1	21
176	13,608,466	9,858,155	.72	-24.1	22
136	12,905,559	9,522,905	.74	-22.9	23
40	702,907	335,250	.48	-40.5	24
176	13,608,466	\$9,858,155	\$0.72	-24.1	25

Table 5 - Ground Silica

Sold or Used by Producers in Illinois, 1942 and 1943^{a/}

Use	1942				1943		Percent change in amount from 1942
	Amount tons	Value at plants		Amount tons	Value at plants		
		Total	Av.		Total	Av.	
Abrasive	51,686	\$352,345	\$6.81	53,347	\$358,256	\$6.72	+ 3.2
Enamel and glass	2,760	19,182	6.90	5,804	42,844	7.38	+110.3
Foundry and filler	82,277	550,443	6.69	69,591	484,824	6.97	- 15.4
Pottery, porcelain and tile	20,677	136,738	6.61	26,479	199,886	7.55	+ 28.1
Other uses	8,903	64,048	7.19	18,633	132,959	6.60	+109.2
Total	166,303	\$1,122,756	\$6.79	173,854	\$1,218,769	\$7.01	+ 4.5

a/ Compiled from joint canvass made by U. S. Bureau of Mines and Illinois Geological Survey.

Table 6 - Tripoli (Amorphous Silica)

Sold or Used by Producers in Illinois, 1942 and 1943^{a/}

Use	1942						Percent change in amount from 1942
	Amount tons	Value at plants		Amount tons	Value at plants		
		Total	Av.		Total	Av.	
Abrasive	4,000	\$ 64,150	\$16.04	3,182	\$ 51,889	\$16.31	- 20.0
Filler and other uses	8,575	139,240	16.24	7,021	116,869	16.65	- 18.1
Total	12,575	\$203,390	\$16.17	10,203	\$168,758	\$16.54	- 18.9

a/ Compiled from joint canvass made by U. S. Bureau of Mines and Illinois Geological Survey.

Stone

Limestone, Dolomite, and Calcareous Marl.- Production of limestone, dolomite, and calcareous marl in Illinois in 1943 amounted to 11,263,000 tons, valued at the plants at approximately \$10,422,000. This was a decrease of about 20 percent in amount from the previous year, due to shortage of labor and truck transportation as well as decreased demand, all of which was caused by concentration on the war effort.

Details of this production are given in Table 7, by kind and by use. Limestone showed a decrease of 17 percent in amount from 1942 and dolomite (stone containing 25 percent or more magnesium carbonate) decreased 22 percent. Calcareous marl increased 2 percent. Government-and-contractor operations declined 70 percent, compared with 17 percent decline for commercial operations. Government-and-contractor operations produced only 2 percent of the total tonnage of stone.

Industrial uses of stone declined 14 percent in amount from 1942. Chemical uses increased 169 percent, and metallurgical and flux uses increased 3 percent. All other industrial uses showed decreases, agstone decreased 20 percent, whiting substitutes 44 percent.

Construction uses of stone declined 23 percent in amount from the previous year. Riprap increased 11 percent, railroad ballast decreased 10 percent, concrete and paving decreased 23 percent, and rubble and veneering stone decreased 90 percent.

Table 7.- Stone (Limestone, Dolomite, Calcareous Marl)

Sold or Used by Producers in Illinois, 1942 and 1943, by Kind and by Use ^{a/}

Line No.	Kind	1942*			
		Plants b/	Amount tons	Value at plants	
				Total	Av.
1	Limestone	98	5,578,502	\$5,886,440	\$1.06
2	Dolomite	54	8,420,904	7,123,985	.85
3	Calcareous marl	3	7,150	4,004	.56
4	Total stone	155	14,006,556	\$13,014,429	\$0.93
	<u>Use</u>				
	<u>Industrial:</u>				
5	Agstone	134	3,754,550	\$ 3,497,050	\$0.93
6	Metallurgical and flux	9	847,593	1,231,311	1.45
7	Chemical uses	2	44,285	26,584	.60
8	Whiting substitutes	4	11,336	48,723	4.30
9	Miscellaneous fillers	4	100,385	352,492	3.51
10	Other industrial uses	9	39,258	86,835	2.21
11	Total industrial	134	4,797,407	5,242,995	1.09
	<u>Construction:</u>				
12	Concrete and paving	71	8,198,310	6,926,442	.84
13	Railroad ballast	16	804,853	617,988	.77
14	Rubble and veneering stone	10	31,047	29,169	.94
15	Flagging	3	158	785	4.97
16	Riprap	20	86,422	90,920	1.05
17	Other construction uses	7	88,359	106,130	1.20
18	Total construction	85	9,209,149	7,771,434	.84
19	Total stone	155	14,006,556	13,014,429	.93
20	Total commercial operations	138	13,238,283	11,945,752	.90
21	Total Gov.-Contr. operations	17	768,273	1,068,677	1.39
22	Total-Both	155	14,006,556	\$13,014,429	\$0.93

* Revised figures.

a/ Compiled from joint canvass made by U. S. Bureau of Mines and Illinois Geological Survey.

b/ Number of plants reporting production during year indicated.

Table 7. - Concluded

1943					Line No.
Plants b/	Amount tons	Value at plants		Percent in change in amount from 1942	
		Total	Av.		
68	4,654,100	\$ 4,911,200	\$1.06	- 16.6	1
43	6,602,503	5,504,301	.83	- 21.6	2
2	7,310	6,950	.95	+ 2.2	3
113	11,263,913	\$10,422,451	\$0.93	- 19.6	4
93	3,022,700	\$ 2,927,900	\$0.97	- 19.5	5
9	868,726	853,958	.99	+ 2.5	6
2	119,244	216,108	1.81	+169.3	7
2	6,407	43,611	6.81	- 43.5	8
5	97,433	303,814	3.12	- 3.0	9
4	26,267	115,349	4.39	- 33.1	10
93	4,140,777	4,460,740	1.08	- 13.7	11
68	6,180,556	5,165,047	.84	- 23.3	12
16	723,281	547,928	.76	- 10.1	13
5	2,987	3,048	1.02	- 90.4	14
3	479	2,380	4.97	-	15
18	100,377	121,491	1.21	+ 11.4	16
4	115,456	121,817	1.05	+ 30.7	17
73	7,123,136	5,961,711	.84	- 22.7	18
113	11,263,913	10,422,451	.93	- 19.6	19
91	11,029,049	10,205,780	.93	- 16.7	20
22	234,864	216,671	.92	- 69.5	21
113	11,263,913	\$10,422,451	\$0.93	- 19.6	22

Table 8. - Cement ^{a/}
Shipped and Used by Producers in Illinois, 1942 and 1943

Line No.	Kind	Lbs. per bbl.	1942			
			Plants b/	Amount bbls.	Value at plants	
					Total	Av.
1	Standard Portland cement	376	4	6,165,989	\$ 8,585,213	\$1.39
2	Special Portland cements: High-early-strength, and Portland-puzzolan	376	3	502,483	1,000,565	1.99
3	Other	376	3	136,328	201,159	1.47
4	Special hydraulic cements: Masonry	280	4	379,342	497,174	1.32
5	Total cement	Equiv. 376	4	7,087,400	\$10,284,111	\$1.45

a/ Compiled from canvass made by U. S. Bureau of Mines.

b/ Number of plants reporting production during year indicated.

Table 9. - Lime ^{a/}
Sold or Used by Producers in Illinois, 1942 and 1943

Line No.	Kind and Use	1942			
		Plants b/	Amount tons	Value at plants	
				Total	Av.
1	<u>Quicklime:</u> Building lime	5	8,725	\$ 83,943	\$9.56
2	Chemical and industrial lime: Paper manufacturing	3	11,778	62,629	5.32
3	Other industrial uses c/	6	262,158	1,385,295	7.20
4	Total quicklime	8	282,661	2,031,867	7.19
5	<u>Hydrated lime:</u> Building lime	6	4,128	39,481	9.56
6	Agricultural lime	5	439	2,877	6.55
7	Chemical and industrial lime	5	26,849	191,927	7.15
8	Total hydrated lime	6	31,416	234,285	7.46
9	Total lime	9	314,007	\$2,266,152	\$7.21

a/ Compiled from joint canvass made by U. S. Bureau of Mines and
Illinois Geological Survey.

b/ Number of plants reporting production during year indicated.

Table 8. - Concluded

1943					Line No.
Plants b/	Amount bbls.	Value at plants		Percent change in amount from 1942	
		Total	Av.		
4	3,861,655	\$5,808,128	\$1.50	- 37.4	1
3	371,729	750,993	2.02	- 26.0	2
2	73,894	98,768	1.34	- 45.8	3
4	387,006	436,318	1.13	+ 2.0	4
4	4,595,474	\$7,094,207	\$1.54	- 35.2	5

Table 9. - Concluded

1943						Line No.
Plants b/	Amount tons	Value at plants		Percent change in amount from 1942		
		Total	Av.			
3	4,760	\$ 53,271	\$11.19	- 45.4	1	
3	8,188	53,394	6.52	- 30.5	2	
6	335,281	2,054,944	6.13	+ 27.9	3	
7	348,229	2,161,609	6.21	+ 23.2	4	
3	1,714	20,218	11.80	- 58.5	5	
	d/	d/			6	
3	25,721	189,117	7.35	- 5.7	7	
3	27,435	209,335	7.63	- 12.7	8	
7	375,664	\$2,370,944	\$ 6.31	+ 19.6	9	

c/ Includes dead-burned (sintered) dolomite.

d/ Included in chemical and industrial lime.

Cement.- Shipments of cement by producers in Illinois during 1943 amounted to 4,595,000 barrels, valued at the plants at more than \$7,094,000. This was a decrease in amount of 35 percent from the previous year, as shown in Table 8. Special hydraulic masonry cements increased 2 percent, standard portland cements decreased 37 percent, and special portland cements decreased from 26 to 46 percent. These decreases resulted from completions of military construction and plants producing war materials.

Lime.- Production of lime in Illinois in 1943 amounted to 375,000 tons, valued at plants at more than \$2,370,000. This was an increase in amount of 20 percent from the previous year, as shown in Table 9. Quicklime, including dead-burned (sintered) dolomite, increased 23 percent, while hydrated lime decreased 13 percent. Considering uses, building operations used 45 percent less quicklime than for the previous year, and 59 percent less hydrated lime. Chemical and industrial uses were 25 percent more for quicklime, and 6 percent less for hydrated lime. These changes were the results of increased demand from war industries and less demand for other purposes.

Mineral Wool.- Production data on mineral wool in Illinois are available for the first time in 1943. The value of the product, see Table 10, was more than \$2,413,000. About 72 percent of this was used for home insulation and the balance for industrial insulation. Raw materials used are woolrock, limestone, slag, and other rock materials.

Table 10. - Mineral Wool

Sold or Used by Producers in Illinois, 1943, by Kind and by Use^{a/}

<u>Kind</u>	1943			
	Plants <u>b/</u>	Amount	Value at plants	
			Total	Av.
Loose wool	6	<u>tons</u> 1,771	\$ 54,884	\$30.99
Granulated wool	6	26,161	946,856	36.19
Bats and rolls	3	<u>M.sq.ft.</u> 15,894	580,316	36.51
Felt, blocks, boards, blankets (with metal mesh)	4	<u>board ft.</u> 4,214,387	463,519	.11
Insulating cement	4	<u>tons</u> 14,984	349,968	23.36
Other products	3	266	18,291	68.80
Total mineral wool	6	-	\$2,413,834	-
<u>Use:</u>				
Home insulation	6	-	\$1,727,457	-
Industrial insulation	4	-	686,377	-
Total mineral wool	6	-	\$2,413,834	-

a/ Compiled from joint canvass made by U. S. Bureau of Mines and Illinois Geological Survey.

b/ Number of plants reporting production during year indicated.

AGSTONE USED IN ILLINOIS IN 1943

Agstone (ground limestone, dolomite, and marl, used for agricultural purposes of soil improvement) amounted to more than 3,113,000 tons in Illinois during 1943, as shown in Table 11. This was a reduction of about 20 percent from the previous year. This reduction was caused by shortage of labor, trucks, and repairs for equipment, due to general concentration of all labor and equipment on production of war materials.

During 1943, agstone was produced in 40 of the 102 counties of the State. Of the total amount used during the year, 95 percent was produced in Illinois.

Table 12 gives the use of agstone by counties in Illinois during 1943, showing the amounts produced in Illinois and those produced in other states. It also shows the arable land in each county, and the average quantity of agstone used, in pounds per acre of arable land. These data are from reports of producers, some distribution data being supplemented by information from county farm advisers. Corresponding data are given for 1942.

Table 13 gives the amount, and percent of total Illinois consumption of agstone produced in other states but used in Illinois during the past five years. Table 14 gives the distribution of agstone produced in Illinois which was marketed in other states during the same period.

Table 11. - Agstone Used in Illinois, 1942 and 1943^{a/}

Line No.		1942			
		Plants b/	Amount tons	Value at plants	
				Total	Av.
	Produced in Illinois:				
1	Limestone	88	2,344,940	\$2,310,357	\$0.99
2	Dolomite	43	1,402,460	1,182,689	.84
3	Calcareous marl	3	7,150	4,004	.56
4	Total produced in Illinois	134	3,754,550	3,497,050	.93
5	Less marketed in other states	7	59,017	55,800	.93
6	Produced and used in Illinois	134	3,695,533	\$3,441,250	\$0.93
7	Produced in other states and used in Illinois	9	171,035	-	-
8	Total agstone used in Illinois	143	3,866,568	-	-

a/ From canvas made by Illinois Geological Survey, in cooperation with
Midwest Agricultural Limestone Institute.

b/ Number of plants reporting production during year indicated.

Table 11. - Concluded

1943					Line No.
Plants b/	Amount tons	Value at plants		Percent change in amount from 1942	
		Total	Av.		
59	1,878,282	\$1,992,122	\$1.06	- 19.9	1
32	1,137,108	928,828	.82	- 18.9	2
2	7,310	6,950	.95	+ 2.2	3
93	3,022,700	2,927,900	.97	- 19.5	4
9	75,971	73,692	.97	+ 28.7	5
93	2,946,729	\$2,854,208	\$0.97	- 20.3	6
10	166,518	-	-	- 2.6	7
103	3,113,247	-	-	- 19.5	8

Table 12.- Agstone Used in Illinois, by Counties, 1942 and 1943^{a/}

County	Tons used in 1942	Tons used in 1943			Acres of arable land (1939 census)	Pounds used per acre	
		Produced in Illinois	Produced in other states	Total used in Illinois		1942	1943
Adams	43,037	65,551	-	65,551	252,446	340	519
Alexander	9,150	8,024	350	8,374	49,866	366	336
Bond	27,371	20,027	53	20,080	122,224	448	329
Boone	14,023	12,342	-	12,342	115,849	242	213
Brown	17,128	15,000	-	15,000	71,549	479	419
Bureau	39,481	30,876	1,986	32,862	352,777	224	186
Calhoun	18,368	15,906	-	15,906	62,607	587	508
Carroll	47,700	34,800	-	34,800	151,498	630	459
Cass	15,635	14,096	-	14,096	137,405	228	205
Champaign	71,948	26,869	-	26,869	487,052	295	110
Christian	100,883	56,176	-	56,176	317,469	636	354
Clark	50,219	51,818	482	52,300	167,721	679	708
Clay	29,690	22,539	544	23,083	147,932	401	312
Clinton	35,711	34,158	574	34,732	184,463	388	377
Coles	47,628	37,000	59	37,059	204,186	466	363
Cook	38,174	39,140	-	39,140	174,178	438	449
Crawford	33,791	34,980	3,775	38,755	129,019	524	601
Cumberland	34,353	19,299	114	19,413	111,117	618	349
DeKalb	29,091	25,910	-	25,910	300,180	194	173
DeWitt	18,127	4,797	-	4,797	178,758	203	54
Douglas	24,555	9,505	1,014	10,519	203,651	241	103
DuPage	17,886	26,790	-	26,790	98,841	362	542
Edgar	62,333	35,154	127	35,281	255,054	489	277
Edwards	20,606	15,151	4,373	19,524	79,811	516	489
Effingham	36,837	19,154	16,865	36,019	153,841	479	468
Fayette	29,590	29,547	57	29,604	207,106	286	286
Ford	27,135	20,531	-	20,531	235,032	231	175
Franklin	24,820	17,835	5,721	23,556	101,537	489	464
Fulton	22,947	11,974	518	12,492	267,772	171	93
Gallatin	14,120	13,325	-	13,325	102,638	275	260
Greene	31,789	20,622	-	20,622	164,814	386	250
Grundy	23,568	27,098	-	27,098	193,637	243	280
Hamilton	19,263	11,813	2,371	14,184	126,415	305	224
Hancock	39,690	40,529	3,486	44,015	265,043	299	332
Hardin	9,414	7,651	-	7,651	21,367	882	716

a/ Compiled from canvass made by Illinois Geological Survey, in cooperation with Midwest Agricultural Limestone Institute.

Table 12. - Continued

County	Tons used in 1942	Tons used in 1943			Acres of arable land (1939 census)	Pounds used per acre	
		Produced in Illinois	Produced in other states	Total used in Illinois		1942	1943
Henderson	41,793	30,600	-	30,600	127,291	657	481
Henry	56,586	60,279	7,354	67,633	327,034	346	414
Iroquois	82,925	71,561	3,712	75,273	536,438	309	281
Jackson	20,428	21,717	28	21,745	147,931	276	294
Jasper	41,413	42,923	-	42,923	174,186	475	492
Jefferson	61,567	21,568	35,454	57,022	146,453	841	779
Jersey	30,868	12,300	-	12,300	104,793	589	235
Jo Daviess	30,515	25,300	-	25,300	144,530	422	350
Johnson	28,612	10,687	-	10,687	59,742	958	358
Kane	25,116	21,445	-	21,445	210,186	239	204
Kankakee	56,072	81,355	-	81,355	300,394	373	542
Kendall	29,388	30,588	-	30,588	150,326	391	407
Knox	35,827	19,034	16,020	35,054	253,753	286	276
Lake	10,775	7,858	-	7,858	108,847	198	144
LaSalle	86,445	71,965	-	71,965	506,546	342	284
Lawrence	20,425	9,824	228	10,052	122,007	335	165
Lee	70,400	77,018	-	77,018	317,176	444	486
Livingston	118,615	34,927	-	34,927	522,760	454	134
Logan	20,552	21,617	-	21,617	305,432	135	142
McDonough	39,883	20,267	-	20,267	225,530	354	180
McHenry	20,580	27,407	-	27,407	211,577	195	259
McLean	142,161	102,245	-	102,245	557,076	510	367
Macon	18,407	35,960	114	36,074	263,970	139	273
Macoupin	34,387	24,217	792	25,009	263,157	261	190
Madison	36,283	25,946	160	26,106	256,470	283	204
Marion	55,294	26,869	11,864	38,733	171,342	645	452
Marshall	18,461	13,896	-	13,896	158,028	234	176
Mason	23,696	21,231	-	21,231	225,535	210	188
Massac	21,100	20,180	-	20,180	56,261	750	717
Menard	23,627	15,526	-	15,526	128,395	368	242
Mercer	28,338	18,350	2,079	20,429	190,569	297	214
Monroe	25,381	35,712	-	35,712	144,902	350	493
Montgomery	43,154	53,955	-	53,955	248,528	347	434
Morgan	14,338	8,620	680	9,300	220,259	130	84
Moultrie	22,513	32,519	409	32,926	154,637	291	426

Table 12. - Concluded

County	Tons used in 1942	Tons used in 1943			Acres of arable land (1939 census)	Pounds used per acre	
		Produced in Illinois	Produced in other states	Total used in Illinois		1942	1943
Ogle	52,017	40,134	-	40,134	309,633	336	259
Peoria	45,973	52,581	226	52,807	203,084	453	520
Perry	21,446	15,639	531	16,170	126,300	340	256
Piatt	38,409	11,595	60	11,655	210,451	365	111
Pike	30,041	14,547	-	14,547	232,460	258	125
Pope	15,988	7,856	-	7,856	52,202	613	301
Pulaski	10,641	7,158	-	7,158	53,830	395	266
Putnam	17,819	7,852	-	7,852	56,148	635	278
Randolph	61,513	40,037	5,839	45,876	196,442	626	467
Richland	17,720	16,033	653	16,686	132,767	267	252
Rock Island	29,204	30,000	107	30,107	127,185	458	474
St. Clair	56,803	73,322	277	73,599	229,600	495	641
Saline	19,744	20,581	-	20,581	99,227	398	415
Sangamon	46,461	42,922	-	42,922	358,668	259	239
Schuyler	8,922	7,100	-	7,100	123,785	144	115
Scott	8,564	4,138	-	4,138	87,070	197	95
Shelby	40,861	33,661	70	33,731	283,990	288	238
Stark	35,148	8,823	2,853	11,676	121,264	580	192
Stephenson	62,000	42,000	-	42,000	212,702	583	395
Tazewell	22,549	16,958	-	16,958	265,832	170	128
Union	19,725	19,130	-	19,130	94,140	419	407
Vermilion	74,908	43,750	-	43,750	390,901	383	224
Wabash	10,234	4,283	4,422	8,705	80,345	255	217
Warren	46,388	56,272	2,658	58,930	210,953	440	559
Washington	49,289	27,559	10,722	38,281	211,504	466	362
Wayne	40,214	37,931	10,555	48,486	215,527	373	450
White	21,272	16,884	4,165	21,049	189,016	225	222
Whiteside	44,025	73,619	2,017	75,636	274,505	320	551
Will	44,984	55,229	-	55,229	345,147	261	321
Williamson	30,826	15,920	-	15,920	86,222	715	369
Winnebago	35,315	35,000	-	35,000	180,603	391	388
Woodford	29,590	19,024	-	19,024	222,776	266	171
Undistrib- uted	215,989	17,740	-	17,740	-	-	-
Total	3,866,568	2,946,729	166,518	3,113,247	20,201,195	Av. 383	Av. 308

Table 13. - Agstone Produced in Other States and Used
in Illinois, 1939-1943^{a/}

(in tons)

Year	Amount sold in Illinois	Percent of total Illinois consumption
1939	71,775	5.1
1940	106,912	5.9
1941	95,226	3.2
1942	171,035	4.5
1943	166,518	5.3

^{a/} From canvass made by Illinois Geological Survey.

Table 14. - Agstone Produced in Illinois and Marketed
in Other States, 1939-1943^{a/}

(in tons)

Year	Wisconsin	Iowa	Missouri	Kentucky	Indiana	Other States	Total
1939	-	-	441	4,751	3,527	19,450	28,169
1940	950	-	353	5,450	3,800	15,225	25,778
1941	-	100	867	940	1,800	1,125	4,832
1942	450	-	203	9,700	28,811	19,853	59,017
1943	-	11,000	1,192	1,000	34,579	28,200	75,971

^{a/} From canvass made by Illinois Geological Survey.

